

# Center for Education and Career Innovation: Demand and Supply Analysis

NOVEMBER 17, 2014



- Review Demand and Supply Data and What We Found
- Respond to Your Questions
- Discuss with You
  - Interpreting the data
  - Implications

- **Project Overview**
- **Employment Demand – by sectors and key occupations**
- **Talent Supply – secondary CTE and postsecondary credential output**
- **Demand-Supply Alignment – data from job demand and credential output**

**Demand:** High employment demand in several sectors identified by regions as their leading sectors.

**Demand and Talent Supply:** Clear need for increases in capacity to produce talent in high wage, *technical* fields to meet current and future demand.

**Talent Supply:** Sharp credential award production imbalances within educational institutions across secondary and postsecondary systems.

**Strategy and Policy:** Discussion is about more than ‘alignment’... Councils can create important strategy and policy around education for growth and opportunity.

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Research and  
Analysis

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**Demand:**  
Sectors and Occupations in  
Regional Economy  
**Supply:** Outcomes in  
Secondary and  
Postsecondary Education

Engagement and  
Discussion

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**Demand and  
Supply Analysis:**  
Presentations

Strategy, Planning and  
Action Steps

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**Works Council's  
Discussions, Strategic  
Planning, Action Steps.**

## Overview of Demand

LABOR MARKET DEMAND MEASURES:

AN ESTIMATE BASED ON BOTH MEASUREMENTS OF REAL-TIME JOB POSTINGS BY EMPLOYERS AND PROJECTIONS OF JOB GROWTH BY THE US BUREAU OF LABOR STATISTICS.



ESTIMATES REFLECT EMPLOYERS SEEKING NEW AND REPLACEMENT EMPLOYEES, ESTIMATES OF TURNOVER, IMPENDING RETIREMENTS AND ECONOMIC GROWTH.

DEMAND FOR AN OCCUPATIONAL GROUP ARE ESTIMATES OF THE SCALE OF DEMAND.

## DEMAND DATA ORGANIZED BY KEY SECTORS

- Manufacturing,
- Healthcare,
- Transportation, distribution and logistics,
- Information technology,
- Finance and insurance,
- Life sciences and engineering,
- Construction and energy,
- Retail,
- Accommodation and food services, and
- Agriculture and biosciences.

## SNAPSHOT OF STATEWIDE DEMAND

		Demand 2013
<b>Manufacturing</b>		
	Skilled Production, Engineering Technology and Related	12,198
	Installation, Maintenance and Repair Workers	9,390
<b>Information Technology</b>		
	Computer and IT Workers	12,122
<b>Healthcare</b>		
	Health Diagnosing and Treating Practitioners	13,335
	Health Technologists and Technicians	6,482
	Health Aides and Support Workers	6,760
<b>Life Sciences and Engineering</b>		
	Engineers	5,344
	Life Scientists and Technicians	2,301
	Architects and Mathematicians	461



## SNAPSHOT OF STATEWIDE DEMAND

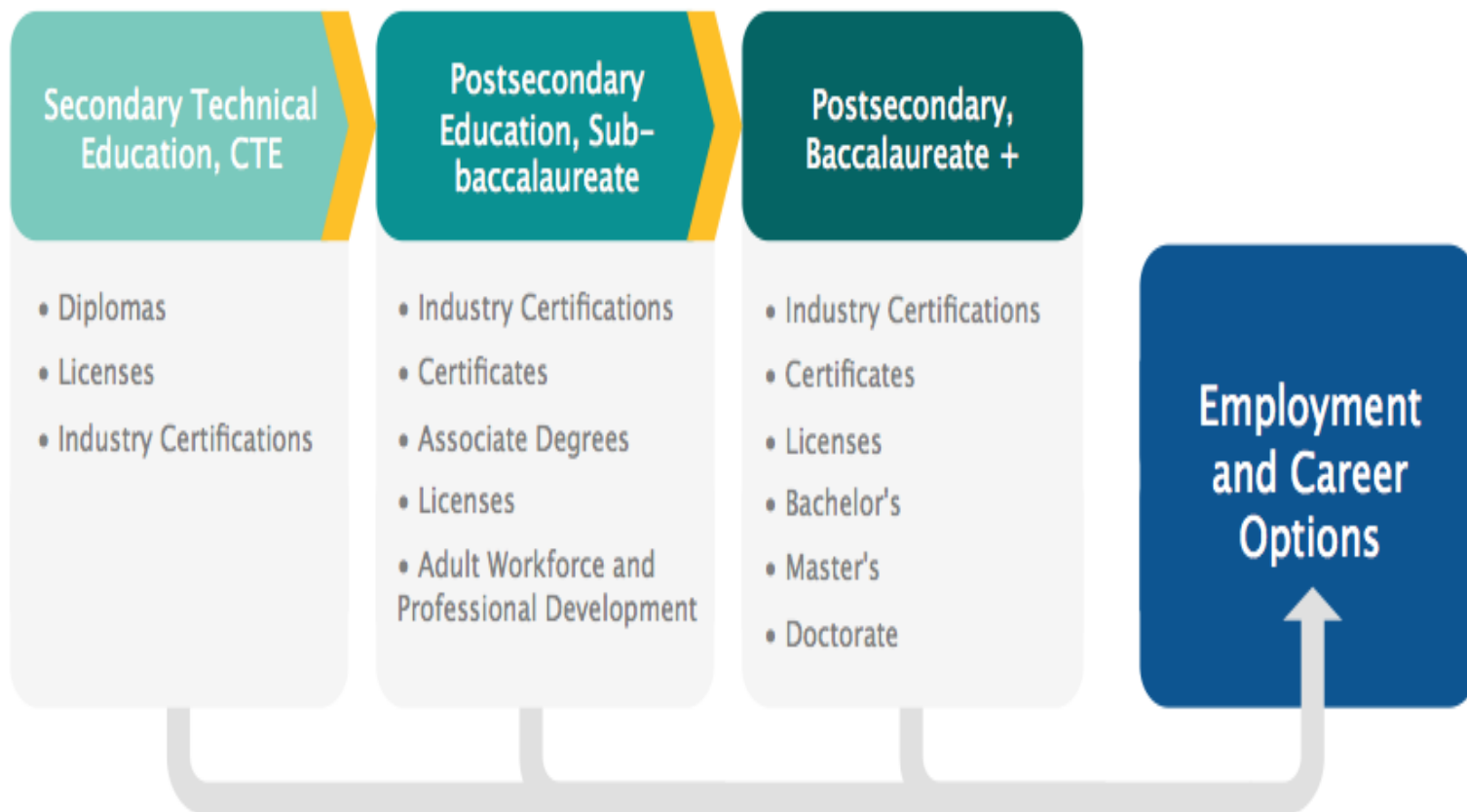
		Demand 2013
<b>Finance and Insurance</b>		
	Finance and Business Operations Specialists	12,325
	Financial and Information Clerks and Administrative Support	16,863
<b>Transportation, Distribution and Logistics (TDL)</b>		
	Transportation and Logistics Workers	23,641
<b>Construction and Energy</b>		
	Construction and Energy Workers	4,088
<b>Agriculture and Biosciences</b>		
	Agricultural and Bio Workers	2,058
<b>Education</b>		
	Educators (Teachers and Related)	7,243
<b>Accommodation and Food Service</b>		
	Accommodation and Food Service Workers	22,010

MANUFACTURING				
Occupational Group	Demand 2013	Average Hourly Wage 2012	Total Jobs in Economy 2013	Postsecondary Education Required 2012
Sales Representatives, Wholesale and Manufacturing	6,657	\$32.59	38,508	79%
Other Installation, Maintenance, and Repair Occupations	5,104	\$19.88	69,772	67%*
Other Production Occupations	3,478	\$15.22	84,567	28%*
Metal Workers and Plastic Workers	2,775	\$17.53	96,348	33%*
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	2,177	\$18.52	36,154	58%*
Assemblers and Fabricators	1,715	\$14.66	89,926	44%*
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	1,396	\$21.66	13,286	29%*
Supervisors of Production Workers	1,281	\$26.12	22,221	38%*
Drafters, Engineering Technicians, and Mapping Technicians	943	\$24.94	14,296	77%*
Supervisors of Installation, Maintenance, and Repair Workers	713	\$28.99	11,031	43%*
Food Processing Workers	648	\$12.64	13,609	51%*

COMPUTERS AND IT				
Occupational Group	Demand 2013	Average Hourly Wage 2012	Total Jobs in Economy 2013	Postsecondary Education Required 2012
Software Developers, Applications	2,565	\$40.62	7,847	97%
Computer Occupations, All Other	2,343	\$33.32	3,050	90%*
Computer Systems Analysts	1,853	\$33.46	8,665	95%
Computer User Support Specialists	1,807	\$20.48	8,690	88%*
Network and Computer Systems Administrators	866	\$31.21	6,862	93%*
Computer Programmers	749	\$29.70	4,997	95%
Database Administrators	676	\$33.01	1,683	94%
Web Developers	478	\$23.88	2,422	95%
Information Security Analysts	297	\$35.67	770	93%*
Computer Network Architects	283	\$41.96	2,031	95%
Software Developers, Systems Software	282	\$42.34	3,571	97%
Computer Network Support Specialists	119	\$26.92	1,699	88%*

HEALTHCARE				
Occupational Group	Demand 2013	Average Hourly Wage 2012	Total Jobs in Economy 2013	Postsecondary Education Required 2012
Health Diagnosing and Treating Practitioners	13,335	\$41.91	108,464	99%
Health Technologists and Technicians	6,092	\$19.89	70,687	81%*
Nursing, Psychiatric, and Home Health Aides	3,958	\$11.05	52,406	49%*
Other Healthcare Support Occupations	2,124	\$14.32	32,302	70%*
Occupational Therapy and Physical Therapist Assistants and Aides	678	\$22.90	3,878	89%*
Other Healthcare Practitioners and Technical Occupations	391	\$25.49	6,155	87%*

## TALENT SUPPLY PIPELINE



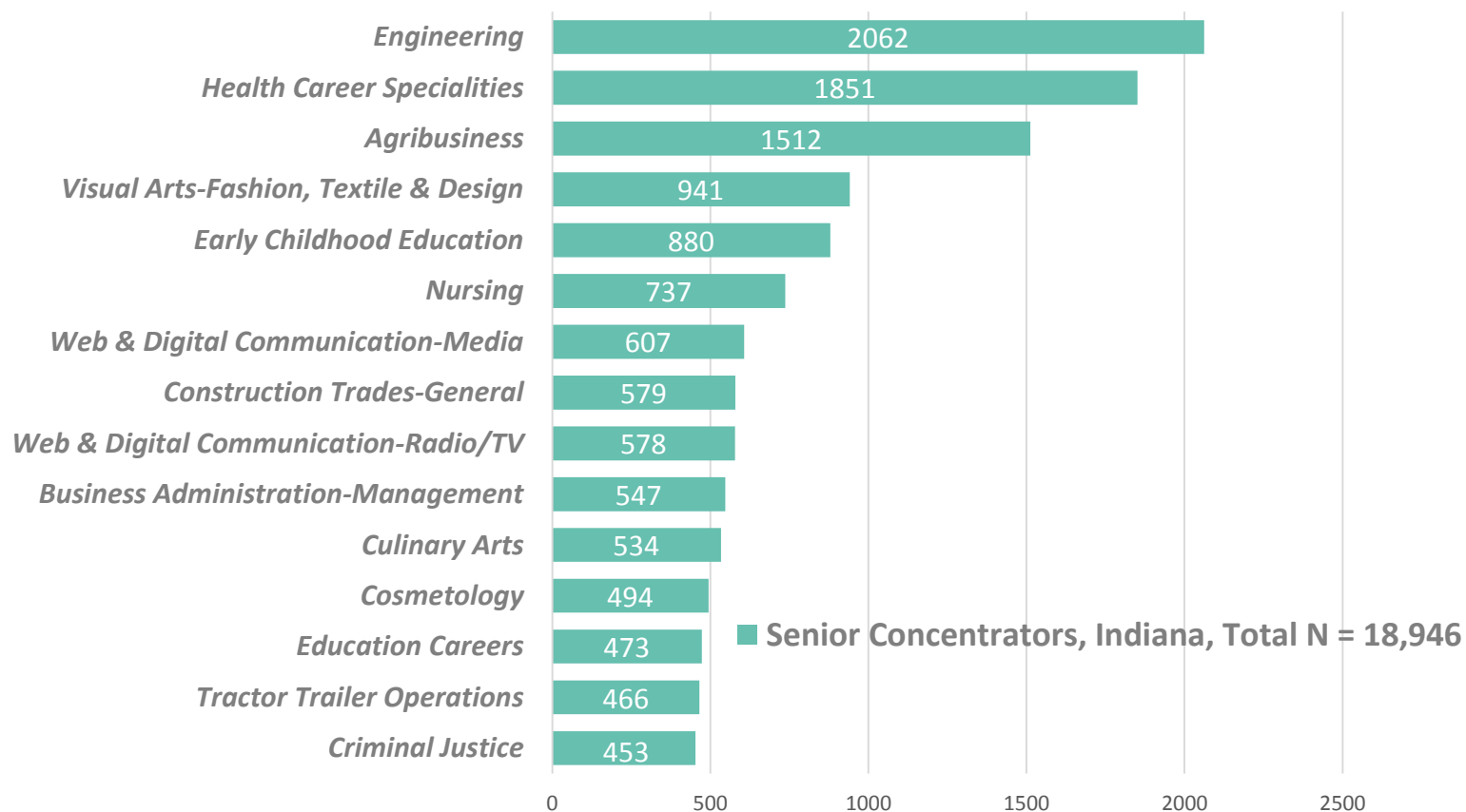
**CAREER AND TECHNICAL EDUCATION...SOME TERMINOLOGY.**

- CTE Enrollment:** Any student who takes a CTE course in a pathway.*
- CTE Concentrator:** Any student who has completed at least 6 credits in a CTE pathway.*
- CTE Senior Concentrator:** A senior student, prepared to graduate, who has completed requirements for inclusion in a CTE pathway concentration.*
- CTE Pathway:** A group of courses related to a technology or occupational field that is approved by the US Department of Education and also by states and: An occupation labeled as High Wage and Moderate/High Demand in Indiana, or 2) An occupation within the eight emerging career areas identified in the Indiana Strategic Skills Initiative, or 3) An occupation approved by the Indiana Department of Education.*

# Overview of Secondary CTE Supply

CTE Cluster	CTE Pathway - Focus	CTE Cluster	CTE Pathway - Focus
Agriculture	Agribusiness	Health Science	Biomedical
	Horticulture & Landscape		Biotechnology
	Life Sciences-Animal Science		Dental
	Life Sciences-Food Science		Dietetics & Nutrition Science
	Life Sciences-Natural Resources		Health Career Specialties
	Life Sciences		Nursing
	Facilities-Building and Facilities Management		Veterinary
Architecture & Construction	Facilities-Facility Maintenance	Hospitality & Human Services	Cosmetology
	Facilities-Facilities Management		Culinary Arts
	Construction Trades-General		Hospitality Management
	Construction Trades-Electrical		Human & Social Services
	Construction Trades-Heavy Equipment	Information Technology	PC Networking & Support-Networking
	Construction Trades-HVAC		PC Networking & Support-PC Support
	Drafting and Design-Architectural		PC Programming
Arts, AV Technology and Communication	Drafting and Design-Mechanical		Advanced Manufacturing
	Visual Arts-Photography		Electronics
	Visual Arts-Fashion, Textile & Design	Manufacturing & Logistics	Engineering
	Visual Arts-Visual Communication		Logistics & Supply Chain Management
	Web & Digital Communication-Media		Machine Tool
	Web & Digital Communication-Radio/TV		Welding
	Business Administration-Accounting		Criminal Justice
Business and Marketing	Business Administration-Management	Public Safety	EMT/Paramedic
	Business Administration-Entrepreneurship		Fire & Rescue
	Business Administration-Hospitality		Automotive Collision Repair
	Business Administration-Marketing		Automotive Technology
	Business Administration-Sports/Entertainment	Transportation	Aviation
Education and Training	Early Childhood Education		Diesel Services Technology
	Education Careers		Recreation & Mobile Equipment
			Tractor Trailer Operations

### INDIANA'S TOP 15 CTE CAREER PATHWAYS BY NUMBER OF GRADUATING SENIOR CONCENTRATORS, 2013

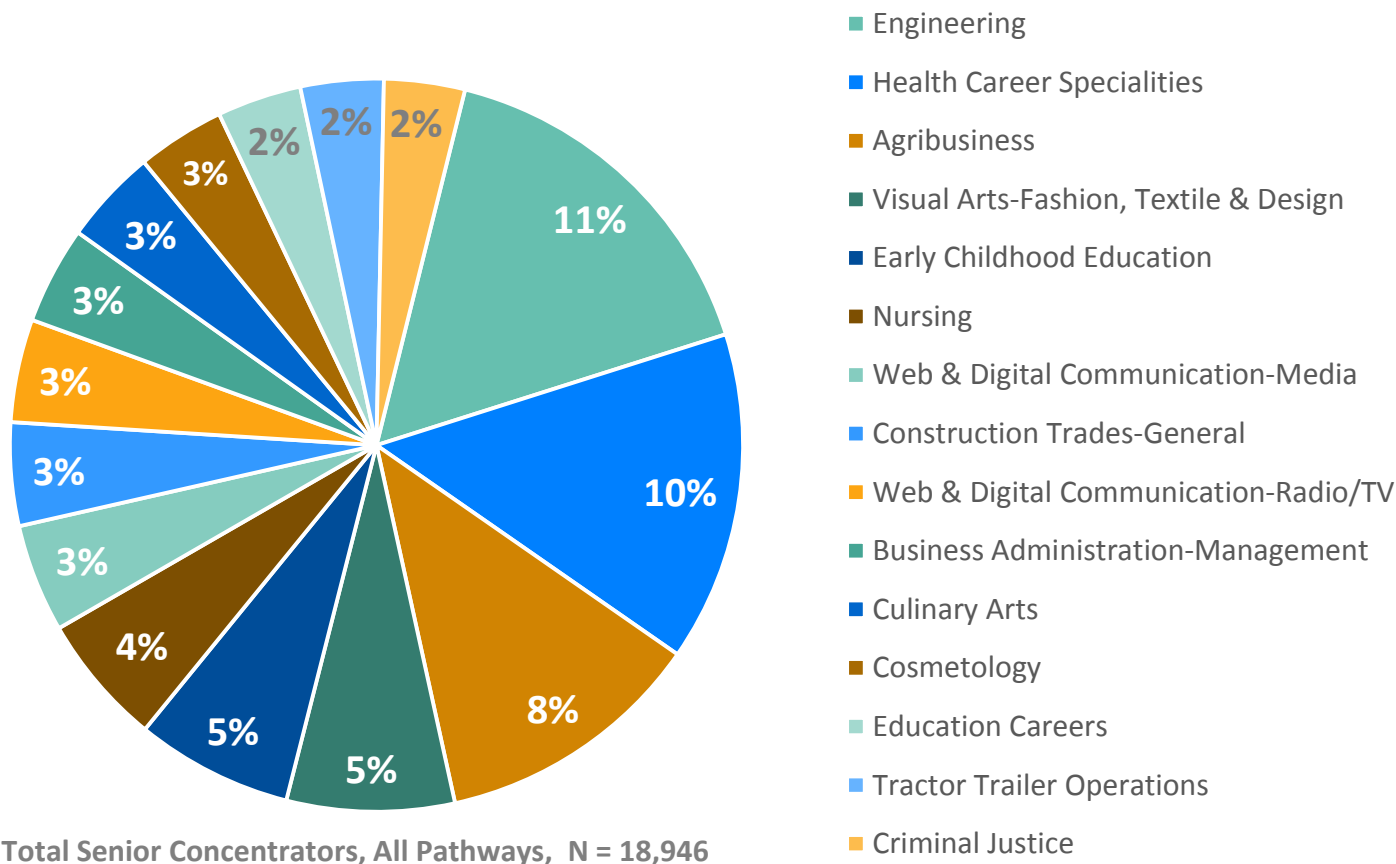


Source: Indiana Department of Workforce Development, Data Provided, 2014. \*Chart does not include 'Unspecified Pathway' concentrators.



## Overview of CTE Graduating Seniors

TOP PROGRAMS OF STUDY, CTE CAREER PATHWAYS BY TOTAL PERCENTAGE OF ALL GRADUATING SENIOR CONCENTRATORS, 2013



## INDIANA CTE GRADUATING SENIOR CONCENTRATORS BY PATHWAY, 2013

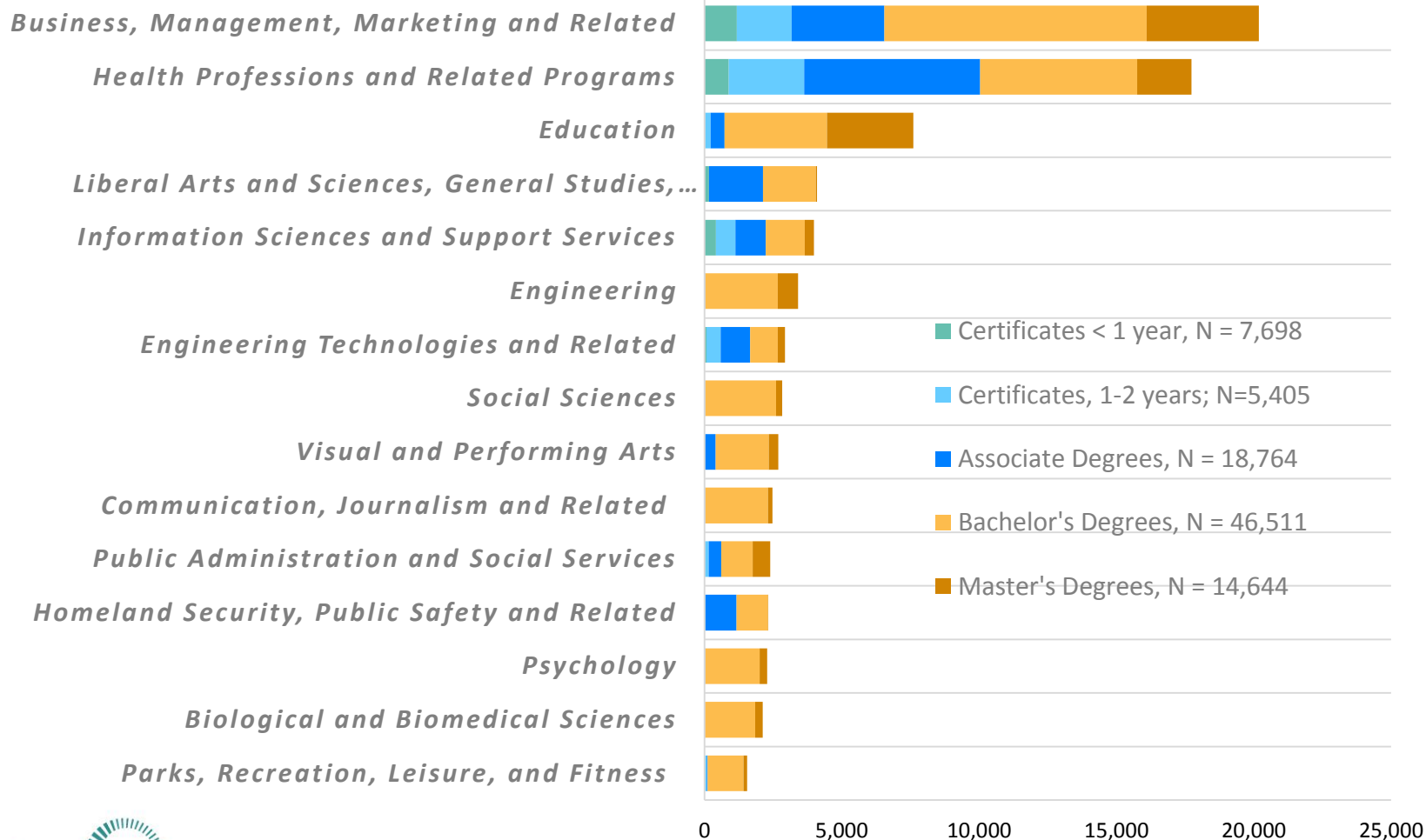
Pathway	Seniors	Pathway	Seniors	Pathway	Seniors	Pathway	Seniors
Engineering	2062	Tractor Trailer Operations	466	Business Administration-Accounting	205	Business Administration-Marketing	111
Health Career Specialties	1851	Criminal Justice	453	Life Sciences-Natural Resources	201	PC Networking & Support-PC Support	109
Agribusiness	1512	Welding	382	Hospitality Management	200	Visual Arts-Photography	98
Visual Arts-Fashion, Textile & Design	941	Horticulture & Landscape	376	Life Sciences-Food Science	190	Electronics	95
Early Childhood Education	880	Automotive Technology	337	Business Administration-Entrepreneurship	159	Business Administration-Sports/Entertainment	91
Nursing	737	Human & Social Services	326	Fire & Rescue	158	Visual Arts-Visual Communication	79
Web & Digital Communication-Media	607	EMT/Paramedic	314	Drafting and Design-Architectural	149	Diesel Services Technology	79
Construction Trades-General	579	Life Sciences-Animal Science	310	Drafting and Design-Mechanical	141	Dietetics & Nutrition Science	71
Web & Digital Communication-Radio/TV	578	Machine Tool	287	Business Administration-Hospitality	139	Life Sciences	52
Business Administration-Management	547	Veterinary	246	Automotive Collision Repair	137	Construction Trades-Electrical	52
Culinary Arts	534	PC Programming	218	Aviation	131	Recreation & Mobile Equipment	47
Cosmetology	494	Facilities-Facilities Management	216	PC Networking & Support-Networking	129	Facilities-Building and Facilities Management	27
Education Careers	473	Dental	216	Advanced Manufacturing	125	Construction Trades-HVAC	26

*Source: Indiana Department of Workforce Development, Data Provided, 2014. Biotechnology and Logistics and Supply Chain Management pathways are not shown because of negligible concentrators. Table does not include 'Unspecified Pathway' concentrators.*

## POSTSECONDARY EDUCATION ...SOME TERMINOLOGY.

- Post Secondary Certificate Less than One Year of Study: An academic certificate of less than 30 credits.*
- Post Secondary Certificate of One to Two Years Study: An academic certificate of more than 30 credits but less than an Associate Degree.*
- Associate Degree: An academic degree of approximately 60 to 68 credits of coursework.*
- Credential: An academic award of a degree or a certificate.*

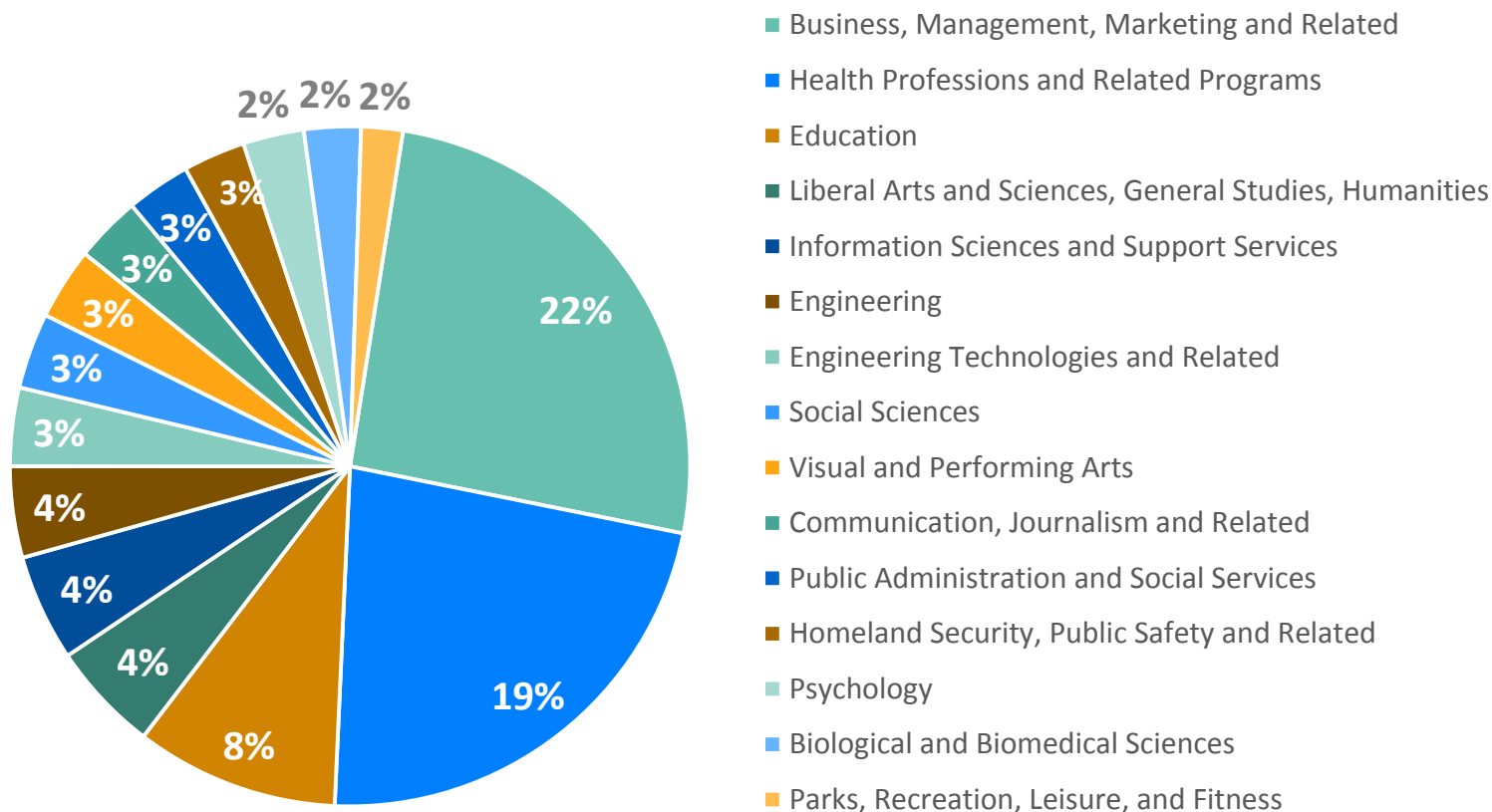
### TOP 15 PROGRAMS OF STUDY, 90 SELECTED INDIANA POSTSECONDARY INSTITUTIONS, BY TOTAL CREDENTIALS AWARDED, 2013



Source: National Center for Education Statistics, IPEDS, 2014.

## Overview of Postsecondary Supply

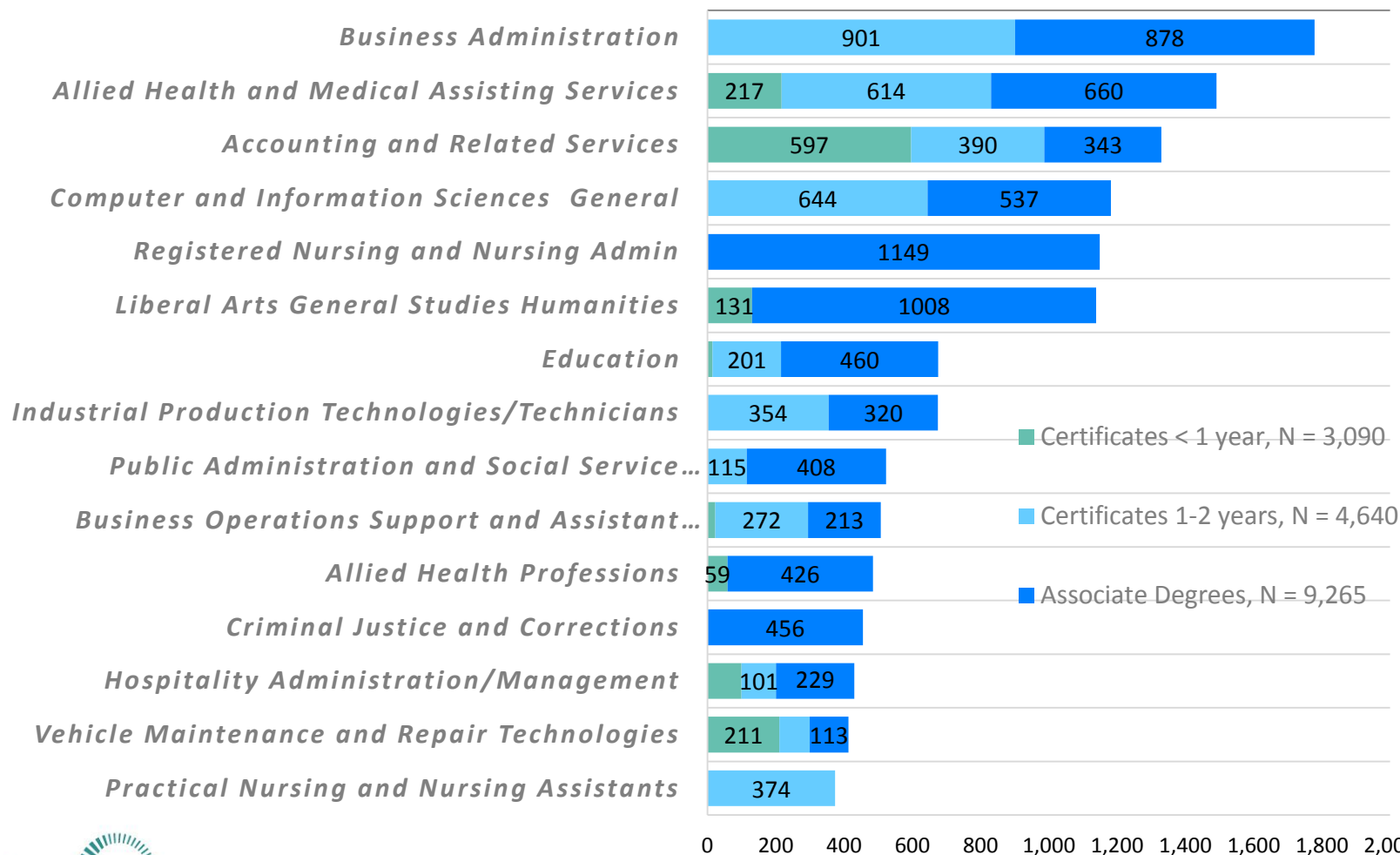
TOP 15 PROGRAMS OF STUDY, 90 SELECTED INDIANA POSTSECONDARY INSTITUTIONS, AS PERCENTAGES OF ALL CREDENTIALS AWARDED, 2013



Total Credentials Awarded, All Programs, N = 91,540

Source: National Center for Education Statistics, IPEDS, 2014.

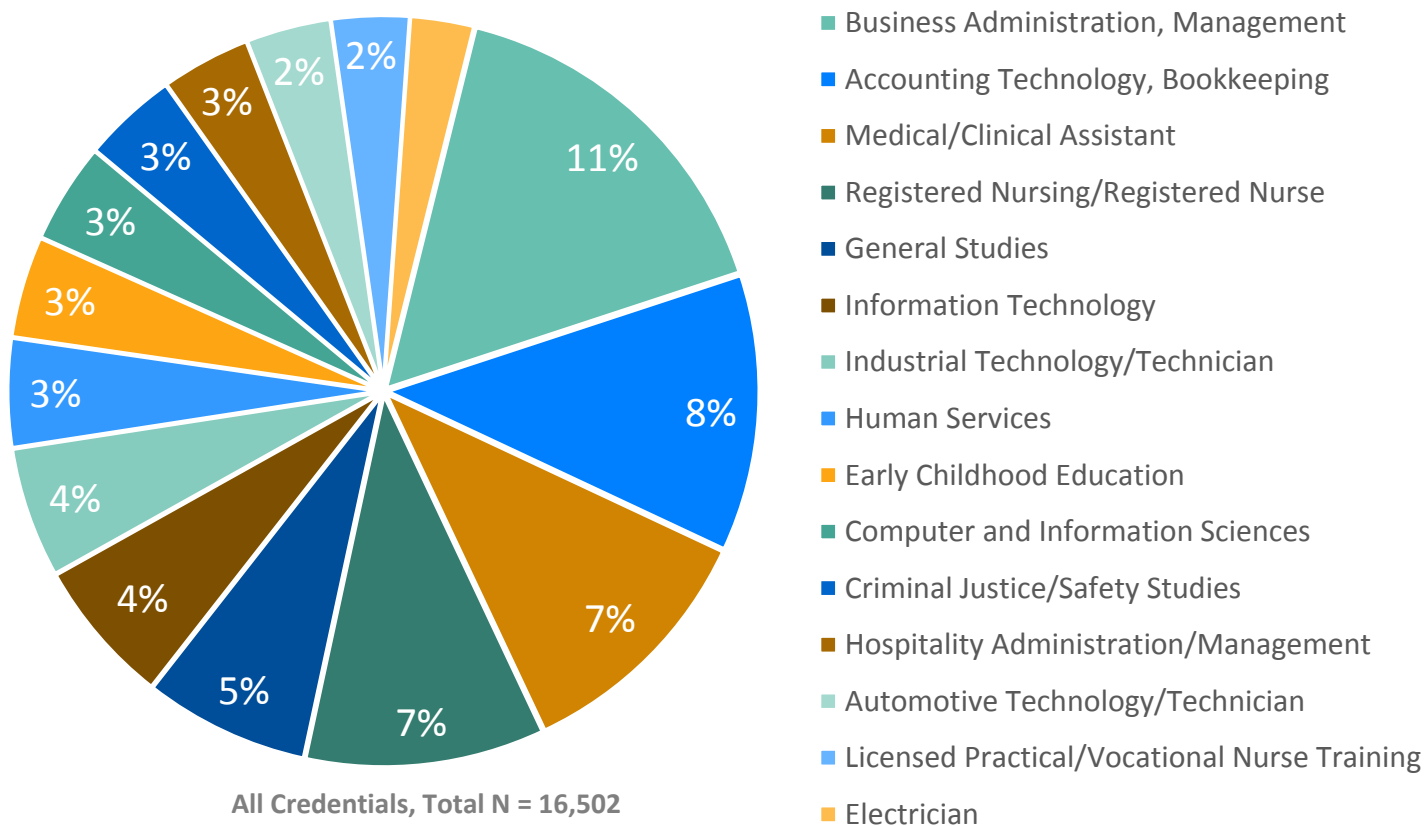
### TOP 15 PROGRAMS OF STUDY, IVY TECH COMMUNITY COLLEGE, BY TOTAL CREDENTIALS AWARDED, 2013



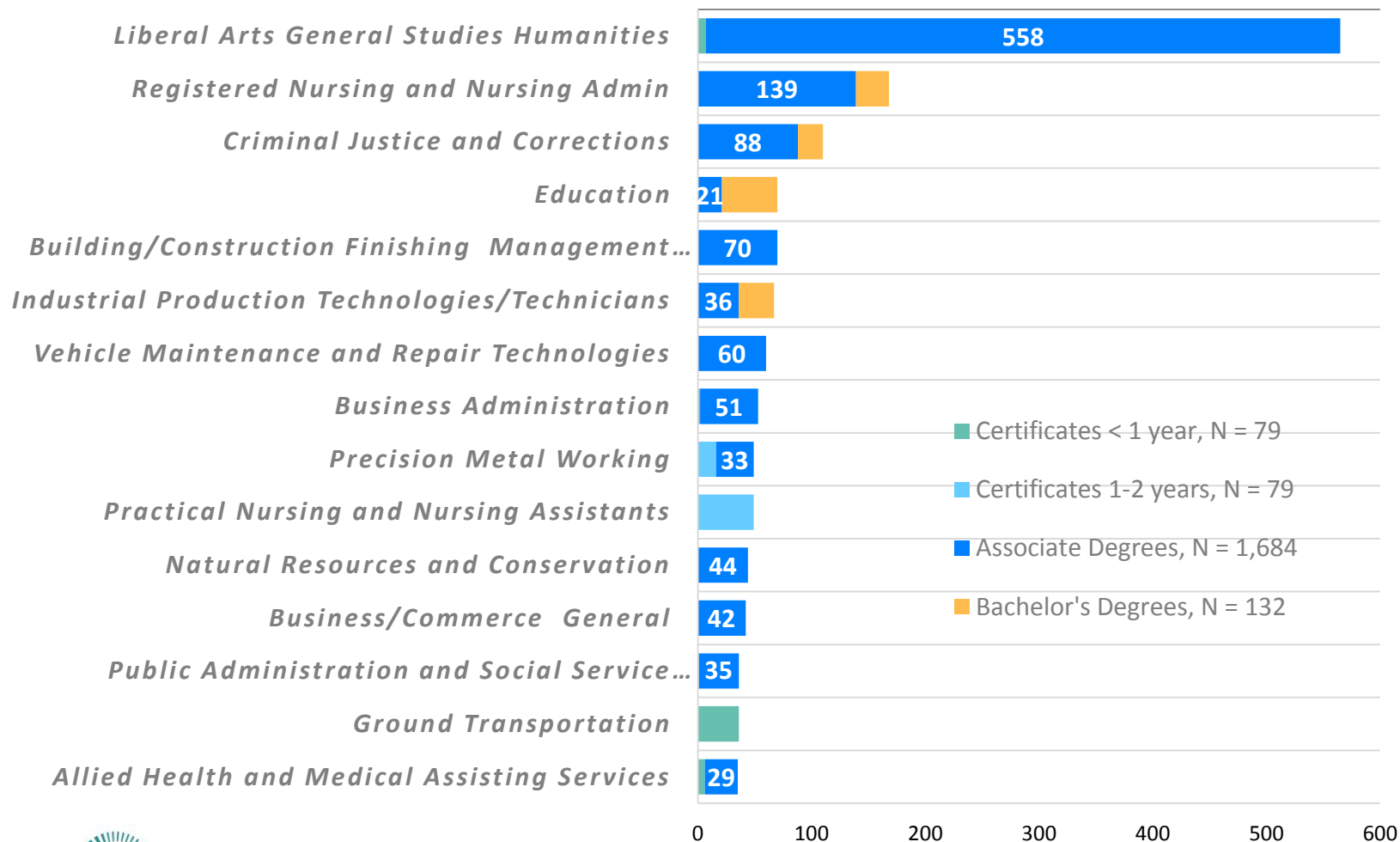
Source: National Center for Education Statistics, IPEDS, 2014.

## Overview of Postsecondary Supply

TOP 15 PROGRAMS OF STUDY, IVY TECH COMMUNITY COLLEGE, STATEWIDE, BY  
TOTAL CREDENTIALS AWARDED, 2012-2013



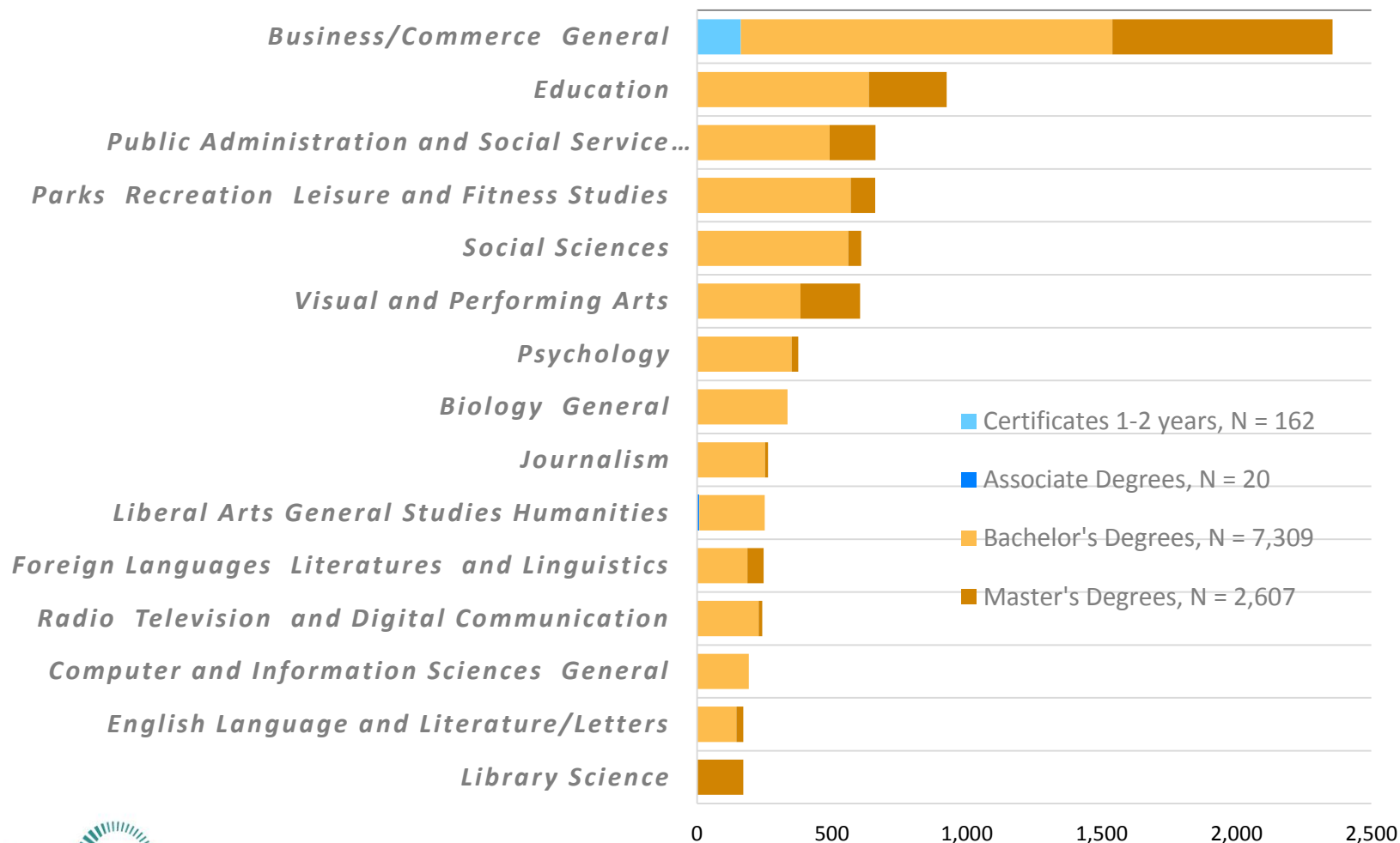
### TOP 15 PROGRAMS OF STUDY, VINCENNES UNIVERSITY, BY TOTAL CREDENTIALS AWARDED, 2013



Source: National Center for Education Statistics, IPEDS, 2014.




### TOP 15 PROGRAMS OF STUDY, INDIANA UNIVERSITY, BY TOTAL CREDENTIALS AWARDED, 2013





Source: National Center for Education Statistics, IPEDS, 2014.

## SECTION 3








# Overview of Demand and Supply Alignment

 Generally speaking, there appears to be more demand than supply of credentials.

 Generally speaking, demand and supply approach balance.


 Generally speaking, there appears more supply of credentials than demand.


### SUMMARY CHART OF ALIGNMENT


		Demand 2013	PSE Credentials Awarded 2013	CTE Concentrators 2013	Alignment
IT	Computer and IT Workers	12,122	3,986	1,641	
Manufacturing	Skilled Production, Engineering Technology and Related	12,198	3,351	1,032	
	Installation, Maintenance and Repair Workers	9,390	1,326		
Health	Health Diagnosing and Treating Practitioners	13,335	9,430	737	
	Health Technologists and Technicians	6,482	3,674	216	
	Health Aides and Support Workers	6,760	3,746	1,851	
AgBio	Agricultural and Bio Workers	2,058	3,125	2,460	

## SECTION 3








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TDL	Transportation and Logistics Workers	23,641	240	1,197	
Financial Services	Finance and Business Operations Specialists	12,325	11,584	911	
	Financial and Information Clerks and Administrative Support	16,863	572		
Construction	Construction Trade Workers	4,088	1,009	1,049	
Life Sciences and Engineering	Engineers	5,344	3,410	2,062	
	Life Scientists and Technicians	2,301	3,046	754	
	Architects and Mathematicians	451	1,024		

**Demand:** High employment demand in several sectors identified by regions as their leading sectors.

**Demand and Talent Supply:** Clear need for increases in capacity to produce talent in high wage, *technical* fields to meet current and future demand.

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**Strategy and Policy:** Discussion is about more than ‘alignment’... Councils can create important strategy and policy around education for growth and opportunity.

- **Distribute Demand and Supply reports to Works Councils**
- **Provide technical assistance as requested by Works Councils and CECI**
- **Assist as requested in Works Council strategic planning and action steps**



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